

STATINTL

Thurs. June 27, 1963

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Declass Review by NIMA / DoD

Light Source and Screen

(Potential Proposal)

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[redacted] and I discussed with [redacted] their proposal on Friday June 14.

It was agreed that the light source could not be separated from the screen problem in their approach. Therefore they will combine their two proposals to produce a complete solution.

Their concept is fundamentally new and startlingly original. It seems to me that this is of the greatest importance that these concepts be investigated further. The concepts appear to be fundamentally sound and their feasibility should be tested at the earliest possible time.

Their screen will be transparent and when not illuminated it will appear to the observer that he is looking into a dark cavity. Thus reflections from lighted room will not interfere with viewing since the light will pass thru the screen and be absorbed by the dark cavity. The image will appear almost as though it were an aerial image.

They will not illuminate the screen in the conventional sense with projection light. They will impinge ultraviolet energy onto a ~~trans~~ coating on the glass screen. The coating will absorb the energy and fluoresce to produce visible light. Since the screen has no granular structure and does not depend on diffusing visible light, it does not have the resolution limitations of present screens.

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[redacted] does not feel they will be intensity limited. He thinks they can produce dazzling brightness in their fluorescence.

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[redacted] agreed to submit feasibility study proposal by July 1, 1963. He called later and requested an extension. He had to be out of town the last week of June and he had a vacation scheduled the first two weeks of July, so he wanted until July 22 to do the proposal. I said I would inform [redacted] and advise him if that schedule was not satisfactory. [redacted] offered to postpone his vacation if the urgency required it.

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this looks interesting, but possibly loaded, should review

proposal carefully - a broad-board should be readily constructed in house

phosphors have resolution limits of their own - but this is not the critical aspect.

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Film Viewers and Readers

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On Fri. June 21 they were in process of moving out of the [REDACTED]

The new address will be:

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[REDACTED] and a half a dozen others were there completing the move. All shop equipment was gone and also the engineering area was moved. Only office equipment files and records were left.

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[REDACTED] and one secretary were staying in [REDACTED] to keep that office open till the first of the month. [REDACTED] was going to keep their digital counter and one technician at [REDACTED] to continue work on debugging.

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* No detail design work has been started on the digital counter for the 705-R reader. They had engaged a man to work on the packaging of the Reader Counter but he has spent his time so far on schematics and bringing the present drawings up to date. This is necessary preliminary since the new counter will draw heavily on the present counter and probably use many of the drawings. The packaging however will be considerably different.

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* They will have to hire a new man in [REDACTED] for the packaging design. There was no estimate as to when the design work would be started again or finished. [REDACTED] thought that manufacture of the counter would take about a month.

It seems to me that the most optimistic estimate for completion of the counter is early Sept. Assembly of the platen and drives should be well along by the end of July. The cabinet will also be completed shortly.

Viewers. They have started on the new viewer order by placing purchase orders with their old vendors. They seem confident of meeting the delivery schedule.

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(Potential Proposal)

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Laser Optical Video Enhancer

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This Lab was formerly called the information systems lab but is now known as the [REDACTED] Lab. [REDACTED] is Director and [REDACTED] is Asst Director. It is located in a facility in [REDACTED] which it shares with a Space Medical Lab. These two Labs are completely separated from The rest of the [REDACTED] operation.

The [REDACTED] Lab turned in a proposal 12 Apr. to provide a Laser output printing stage for the Image Enhancer. The proposal was soundly conceived and [REDACTED] advised that a contract was being prepared to initiate the work.

[REDACTED] will take over as contract monitor it seems, and George and I visited the Lab Wed 26 June. This is a talented group and they have about $\frac{1}{2}$ million dollars a year backing from the parent company for in-house development work on Lasers, closed circuit TV type work and other things connected with electrical manipulation of video signals. They also have several contracts for development work.

They had not received the contract yet for the work on the Image Enhancer which was expected momentarily. In checking back with WDC, we found that the contract could not be placed from this year's funds and there fore would be delayed. This was a bit of a shock to the Contractor. Apparently the Staff work will have to be done when George gets back.

The people whose clearances had been requested in March had not been contacted or briefed yet so there was no conversation regarding secure matters.

This Lab is working on several things which may be of future interest and so a continual appraisal of their activity is recommended.

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[REDACTED] left [REDACTED] about a month ago and is now associated with [REDACTED]. There are two activities at [REDACTED] which are of interest. One is their [REDACTED] project which could have an important bearing on mission tracking and plotting. The other is their AUTOMATIC PHOTO READING work which has possible application to automatic sorting of mission material into urban/rural or other texture type classifications.

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[REDACTED] Project Engineer; Mr. [REDACTED] Project Director; and [REDACTED] head of Reconnaissance/Intelligence Program Office briefed [REDACTED] and me on the [REDACTED] concept. They have conceived a complete system using a KC-6 Cartographic Camera and five Lasers for Terrain Profile Recording. Computer operation on the output of the Laser TPR enables them to make precise determinations of relative vehicle location and attitude. The precision of these determinations they claim will permit bridging over long distances without intermediate ground control. Of more interest perhaps is the possibility of providing automatically, information on precise mission ground track. This would be a great help in preparing Mission strip maps to the PI.

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Since the five Laser beams illuminate small spots on the ground and the camera sees these spots when it takes its picture, it seemed possible that ~~an~~-a during viewing in a projector, a detector might be devised which would lock onto these spots. I inquired if this might permit automatic stereo registration of continuously moving film. Continuous stereo viewing of mission material being scanned (presently not feasible) would certainly be an important development. They were not certain whether this was possible, but it seems to me the question should be explored further.

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of DIA has been briefed on [REDACTED] 2008

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True (1)

[redacted]

Fri. June 28, 1963 (4)

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[redacted]

[redacted]

[redacted]

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[Handwritten signatures and marks]

TO #5. Evaluate Mk I Multiple Image Correlator

The evaluation program is going very well and they will complete it and have the machine ready for shipment ~~as~~ scheduled the latter part of July. They have generated considerable output which demonstrates beyond doubt that the concept is feasible.

pym

The machine does not (and was not intended to) improve the image of excellent fine grain pictures taken under ideal conditions. There is however substantial image improvement of grain limited pictures taken under adverse conditions.

The Mk II machine which will be an operational piece of equipment will be an excellent addition to your bag of tricks. The most urgent current aspect is to implement a system which will take advantage of the power of the correlation concept.

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[redacted] of [redacted] discussed their latest developments of the theory with [redacted], and me. [redacted] grasp of the subject was quite sound. The two prong attack on the problem, theoretical and experimental, has been fruitful and has put [redacted] well ahead of anyone else in this field.

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[redacted] were urged to see the collection people as soon as possible to propose techniques which would produce inputs to exploitation for use of the concept.

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There is considerable enthusiasm at [redacted] over the results of their recent efforts in image correlation and it is of great importance to maintain the continuity of this effort.

[redacted]

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HTA/5 Film Processor

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Granite 94101

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is project engineer and the one most familiar with all aspects of this machine.

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The HTA/5 is the first application of new fluid bearings to wide film processors. It should offer important improvements in eliminating film tension, scratches and abrasions and in improved turbulation. The dryer which floats the film on air bearings should provide an appreciable increase in drying efficiency. Thus, Transport speeds can be increased over that usually available without the usual tremendous increase in power consumption.

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The machine was in the final stages of assembly and they expected to start testing on Mon. July 1. expected to complete the testing by about July 15 and ready the machine for shipment to March AFB for installation and test. It is my understanding the March AFB tests are supposed to be about a one month program.

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Since the machine will be under the scrutiny of many people from many Labs while it is at March, it is important that it be well debugged before it gets there. I would recommend that not be held rigidly to their shipping date, but that they be allowed to take the extra days, or week or even two weeks if necessary to assure that the machine runs through all its paces properly and that most of the bugs are found before the March AFB shakedown cruise.

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If you can arrange clearance, I would be glad to check in on the March Field operation during the period that cannot be there.

This is a well conceived machine and the general execution appears to be excellent. It is the details that count, however, and this wont be known for another month.

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